

RH

Work Order ID 76617

\*76617\*

Page 1

Item ID: D206-642-151

Accept

\*N900040100\*

Setup Start \*NS1\*

Revision ID:

Stop \*NS2\*

Item Name: Replacement Skidtube

Start Date: 18/11/2011 Start Qty: 1.00

\*1\*

Cust Item ID:

Required Date: 16/01/2012 Req'd Qty: 1.00

\*1\*

Customer:

Reference:

Approvals: Process Plan: M.L.J

Date: 11/11/18

Tooling:

Date:

Run Start \*NR1\*

QC:

Date:

SPC (Y/N):

Date:

Stop \*NR2\*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr

Revision Nbr

D3804

A

IIN-D206-642

O

100

0.00

\*100\*

DOCUMENT CONTROL

DC

Memo

0.00

Document Control

Photocopy bluefile & type labels per PPP D206-642-151

CHG001

N/A CK 12/01/02

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng/ Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

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Item ID: D206-642-151

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**\*N900040100\***Setup Start **\*NS1\***

Revision ID:

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Start Date: 18/11/2011 Start Qty: 1.00

**\*1\***

Cust Item ID:

Required Date: 16/01/2012 Req'd Qty: 1.00

**\*1\***

Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_  
QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Run Start **\*NR1\***Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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110.

**\*110\***

Skidtubes

Skidtubes

Skidtubes

Memo

0.00

0.00

1-Deburr Fwd edge of tube

2- Remove ridge on inside of Fwd edge of tube as per Dwg D3804

3-Weld Fwd Cap as per Dwg D3804. Use aluminum rod. Grind D2647 to fit as required.

Pick:

Qty Part Number Description Batch

A/R Aluminum Rod MW 7889

4-Grind weld flush to cap on top surface only.

5-Cut Aft end as per dwg D3804 from front of tube and Deburr

6-Remove inner indexing ridge on Aft end of skidtube as per Dwg D3804

7-Open holes for Aft end cap as per Dwg D3804 with #30 Drill Bit using DT8025.

8-Drill pilot holes using Dt8166 &amp; DT8169D &amp; DT9771.

9-Locate DT8732 from inner Aft saddle hole &amp; 3rd crossbolt hole. Insert D3286-1 doubler using DT8732 &amp; D206-642-241-T1, then locating doubler off of 3/16" holes, cleco DT8732 &amp; doubler leaving DT8732 for added support.

10- Drill D3286-1 doubler rivet holes in tube using # 30 drill, spot drilling doubler at the same time.

11/12/05

BE 11-12-05

SA 11-12-06 B

11/12/06

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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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Item ID: D206-642-151

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**\*N900040100\***

Setup Start

**\*NS1\***

Revision ID:

Stop

**\*NS2\***

Item Name: Replacement Skidtube

Start Date: 18/11/2011 Start Qty: 1.00

**\*1\***

Cust Item ID:

Required Date: 16/01/2012 Req'd Qty: 1.00

**\*1\***

Customer:

Reference:

Approvals:

Process Plan: \_\_\_\_\_

Date: \_\_\_\_\_

Tooling: \_\_\_\_\_

Date: \_\_\_\_\_

Run Start

**\*NR1\***

QC: \_\_\_\_\_

Date: \_\_\_\_\_

SPC (Y/N): \_\_\_\_\_

Date: \_\_\_\_\_

Stop

**\*NR2\***Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

11-Working from the center out, drill # 30 holes into D3286-I doubler. Cleco each hole as it is being drilled. Verify angle of holes to accommodate rivet heads.

12-Remove 3/16" cleco's only and open GHW holes to Ø0.500" as per Dwg D3804

13-Remove D3286-I doublers, identify orientation, deburr, then attach them to the workorder

14-Remove indexing edge using DT8741 as per Dwg D3804

15-C'sink GHW rivet holes as per Dwg D3804

16- Open Aft cap hole #6.

\*\*\*\*no wearplate holes for this skidtube\*\*\*\*

17-Deburr tube and blow out chips from inside the tube

120

**\*120\***

QC

Quality Control

QC6- Inspect dimensions to drawing

0.00

Memo

0.00

*5 11/12/06**DL  
11/12/06*

W/O:		WORK ORDER CHANGES					
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Cust Item ID:

Required Date: 16/01/2012 Req'd Qty: 1.00

**\*1\***

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start **\*NR1\***

QC:

Date:

SPC (Y/N):

Date:

Stop **\*NR2\***Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

140

Chemical Conversion Coat per QSI005 4.1

0.00

**\*140\***

HandFinish

Memo

0.00

Hand Finishing

OK 11/12/06

150

QC3- Inspect Part Finish

0.00

**\*150\***

QC

Memo

0.00

Quality Control

DP 11-12-06

160

Skidtubes

0.00

**\*160\***

Skidtubes

Memo

0.00

Skidtubes

1-Open holes to finished size as per Dwg D3804, (without cutting fluid)

2-C'sink crossbolt spacer holes as per Dwg D3804(without cutting fluid)

3-Deburr and blow out all chips from inside the tube

OK 11/12/06

W/O:		WORK ORDER CHANGES					
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Item Name: Replacement Skidtube

Start Date: 18/11/2011 Start Qty: 1.00

**\*1\***

Cust Item ID:

Required Date: 16/01/2012 Req'd Qty: 1.00

**\*1\***

Customer:

Reference:

Approvals:

Process Plan: \_\_\_\_\_

Date: \_\_\_\_\_

Tooling: \_\_\_\_\_

Date: \_\_\_\_\_

Run Start **\*NR1\***

QC: \_\_\_\_\_

Date: \_\_\_\_\_

SPC (Y/N): \_\_\_\_\_

Date: \_\_\_\_\_

Stop **\*NR2\***Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

170

QC6- Inspect dimensions to drawing

0.00

**\*170\***

QC

Memo

0.00

Quality Control

1 0 BE11-1206

180

Skidtubes

0.00

**\*180\***

Skidtubes

Memo

0.00

Skidtubes

1-Locate, install and rivet doublers as per Dwg D3804. Micro-shave rivets as required

DC 11/12/06

2-Bond D2654-1 web in place as per QSI 015. Ensure holes line up. Allow 12

Hrs. cure time before cutting

Start Date: 11/12/06 Time: 6:03Finish Date: 11-12-07 Time: 9:00

Pick:

Qty Part Number Description Batch

A/RSikaflex-291 119399Sikaflex expire date: 12/08/13DC  
11/12/06

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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**\*N900040100\***

Setup Start

**\*NS1\***

Revision ID:

Stop

**\*NS2\***

Item Name: Replacement Skidtube

Start Date: 18/11/2011 Start Qty: 1.00

**\*1\***

Cust Item ID:

Required Date: 16/01/2012 Req'd Qty: 1.00

**\*1\***

Customer:

Reference:

Approvals:

Process Plan: \_\_\_\_\_

Date: \_\_\_\_\_

Tooling: \_\_\_\_\_

Date: \_\_\_\_\_

Run Start

**\*NR1\***

QC: \_\_\_\_\_

Date: \_\_\_\_\_

SPC (Y/N): \_\_\_\_\_

Date: \_\_\_\_\_

Stop

**\*NR2\***Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

190

QC5- Inspect part completeness to step on W/O

0.00

**\*190\***

QC

Memo

0.00

Quality Control

1 0 BE 11.12.04

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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Item ID: D206-642-151

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**\*N900040100\***Setup Start **\*NS1\***

Revision ID:

Stop **\*NS2\***

Item Name: Replacement Skidtube

Start Date: 18/11/2011 Start Qty: 1.00

**\*1\***

Cust Item ID:

Required Date: 16/01/2012 Req'd Qty: 1.00

**\*1\***

Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Run Start **\*NR1\***

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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200

0.00

**\*200\***

Skidtubes

Skidtubes

Memo

0.00

Skidtubes

1-remove alodine from around hole and prepare for welding

2-Prep per QSI 005 and Insert D2649 crossbolt spacers. Weld as per QSI 004 and Dwg D3804. Remember to back drill each hole to 0.25" before welding the other side. Use aluminum rod.

Pick:

QtyPart NumberDescriptionBatch  
A/RAluminum Rod 17117889

3-Grind welds flush as per Dwg D3804.

4-Using DT8733, insert (2) D3286-3 spacers as per QSI 004 and Dwg D3804. Remember to back drill each hole to Ø0.402" before welding other side. Use SS rod as required.

A/RSS Rod NONE BE 11-12-07

5-Counterbore 5/16" x 0.750" deep except 7th hole from Aft end as per Dwg D3804. Deburr

BE 11-12-07

BE 11/12/07

11-12-8

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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**Work Order ID 76617****\*76617\***

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November-18-11 9:18:33 AM

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**\*N900040100\***

Setup Start

**\*NS1\***

Revision ID:

Stop

**\*NS2\***

Item Name: Replacement Skidtube

Start Date: 18/11/2011 Start Qty: 1.00

**\*1\***

Cust Item ID:

Required Date: 16/01/2012 Req'd Qty: 1.00

**\*1\***

Customer:

Reference:

Approvals:

Process Plan: \_\_\_\_\_

Date: \_\_\_\_\_

Tooling: \_\_\_\_\_

Date: \_\_\_\_\_

Run Start

**\*NR1\***

QC: \_\_\_\_\_

Date: \_\_\_\_\_

SPC (Y/N): \_\_\_\_\_

Date: \_\_\_\_\_

Stop

**\*NR2\***Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

210

**\*210\***

HandFinish

Hand Finishing

RH

HandFinishing

Memo

Install D2680-041 Nut Plate as per Dwg D3804

0.00

0.00

DP

11-12-8

215

**\*215\***

QC

Quality Control

QC9- Inspect visual per QSI004- Fusion Welds

Memo

0.00

0.00

MA 11.12.08

220

**\*220\***

QC

Quality Control

QC10- Inspect visual per QSI004- ground welds

Memo

0.00

0.00

Sul12/09

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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# Work Order ID 76617

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Item ID: D206-642-151 Accept **\*N900040100\*** Setup Start **\*NS1\***  
 Revision ID: Stop **\*NS2\***  
 Item Name: Replacement Skidtube  
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Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_ Run Start **\*NR1\***  
 QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_ Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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230 QC5- Inspect part completeness to step on W/O 0.00

**\*230\***

QC

Memo

Quality Control

240 Pressure Wash per QSI005 4.3 0.00

**\*240\***

HandFinish

Memo

Hand Finishing

250 White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum 0.00

**\*250\***

Powdercoat

Memo

START TIME:

OVEN TEMPERATURE:

FINISH TIME:

8:30 0.00  
 3200 F  
 9:00

M11A480

IX M-11/12/10

IX M-11/12/12

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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Work Order ID 76617 RH

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\*N900040100\*

Setup Start

\*NS1\*

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\*NS2\*

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Run Start

\*NR1\*

QC:

Date:

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Date:

Stop

\*NR2\*

Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Tool ID

Tool #

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

260

QC3- Inspect Part Finish

0.00

\*260\*

QC

Memo

0.00

Quality Control

1 RH / 4 11/12/13

270

HandFinishing

0.00

\*270\*

HandFinish

Memo

0.00

Hand Finishing

1-Install D2651-3 O-Rings on D2651-1 plugs with Petroleum Jelly and install plugs as per Dwg D3804. Clean excess adhesive.

1 RH / 4 11/12/13

W/O:		WORK ORDER CHANGES					
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Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_ Run Start **\*NR1\***  
 QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_ Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
280	HandFinishing	0.00							
<b>*280*</b>									
HandFinish	Memo	0.00							
Hand Finishing	✓ 1-Install D2646 Aft Cap and seal with Sikaflex. Clean excess adhesive A/RSikaflex-291 <u>11119443</u> Sikaflex expire date: <u>12/01</u> ✓ 2- Install wearplate as per dwg 2-Wing Walk as per Dwg D3804 and QSI 005 4.4 Batch: <u>11119094</u>								
290	QC3- Inspect Part Finish	0.00							
<b>*290*</b>									
QC	Memo	0.00							
Quality Control									

12/11 / 11/12/13

Sum 12/14

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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Item ID: D206-642-151 Accept **\*N900040100\*** Setup Start **\*NS1\***  
 Revision ID: Stop **\*NS2\***  
 Item Name: Replacement Skidtube  
 Start Date: 18/11/2011 Start Qty: 1.00 **\*1\*** Cust Item ID:  
 Required Date: 16/01/2012 Req'd Qty: 1.00 **\*1\*** Customer:  
 Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_ Run Start **\*NR1\***  
 QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_ Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
300 <b>*300*</b> QC Quality Control	QC5- Inspect part completeness to step on W/O  Memo	0.00  0.00							
310 <b>*310*</b> Packaging Packaging	Packaging  Memo Identify and pack for shipping as per PPP D206-642-151 Location: _____ PPP Rev: _____	0.00  0.00							
320 <b>*320*</b> QC Quality Control	QC21- Final Inspection - Work Order Release  Memo	0.00  0.00							

M.L.J 11/12/29  
 (1)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



# Picklist Print

November-18-11 9:18:37 AM

Page 1

Work Order ID: 76617

**\*76617\***

Parent Item: D206-642-151

**\*D206-642-151\***

Parent Item Name: Replacement Skidtube

Start Date: 18/11/2011

Required Date: 16/01/2012

Start Qty: 1.00

Required Qty: 1.00

Comments:

IPP REV:A 10.12.08 PER IIN REV.N DD VERF:EC  
REV:B 11.09.16 PER IIN REV.O DD VERF:EC

IPP

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

D2620

Manufactured No

110

Each

14.0000

1

1

**\*D2620\***

Skidtube, 206 Skidtube

\*\*

DL 11/12/05

Location

75471

Loc Qty

Loc Code

LG

14

71616

3

71617

6

74459

2

74460

3

(1)

D2647

Manufactured No

110

Each

253.0000

1

1

**\*D2647\***

Cap

\*\*

BE11-12-05

Location

Loc Qty

Loc Code

LG002

253

55352

3

71171

1

73826

139

75482

110

1

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

# Picklist Print

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Page 2

Work Order ID: 76617

**\*76617\***

Parent Item: D206-642-151

**\*D206-642-151\***

Parent Item Name: Replacement Skidtube

Start Date: 18/11/2011

Required Date: 16/01/2012

Start Qty: 1.00

Required Qty: 1.00

CR3212-4-04

Purchased No

.180

Each

15,860.00

52

52

**\*CR3212-4-04\***

Cherry Rivet

\*\*

OK 11/12/06

Location

Loc Qty

Loc Code

ST331

5870

116471

78

117816

3

118686

1

118840

16

119017

5762

119075

10

st510

9990

119075

9990

52

D2654-1

Manufactured No

180

Each

4.0000

1

1

**\*D2654-1\***

Web

\*\*

OK 11/12/06

Location

Loc Qty

Loc Code

LG

4

73794

1

73799

1

75475

1

75477

1

1

D3286-1

Manufactured No

180

Each

175.0000

2

2

**\*D3286-1\***

Doubler

\*\*

OK 11/12/06

Location

Loc Qty

Loc Code

LG002

175

74111

1

74441

4

74872

59

75484

111

2

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

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Page 3

Work Order ID: 76617

**\*76617\***

Parent Item: D206-642-151

**\*D206-642-151\***

Parent Item Name: Replacement Skidtube

Start Date: 18/11/2011

Required Date: 16/01/2012

Start Qty: 1.00

Required Qty: 1.00

D2649 Manufactured No 200 Each 461.0000 19 19

**\*D2649\***

Cross Bolt Spacer

**\*\***

BE 11-12-07  
B73859 19

Location	Loc Qty	Loc Code
LG	134	
68224	2	
71355	2	
72704	2	
72841	11	
73855	117	
LG001	327	
65317	1	
68507	11	
73390	8	
73857	21	
73858	282	
73860	4	

D3286-3 Manufactured No 200 Each 153.0000 2 2

**\*D3286-3\***

Spacer

**\*\***

BE 11-12-07

Location	Loc Qty	Loc Code
LG	72	
74870	72	
LG001	1	
74117	1	
LG002	80	
75483	80	

2

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

# Picklist Print

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Page 4

Work Order ID: 76617

\*76617\*

Parent Item: D206-642-151

\*D206-642-151\*

Parent Item Name: Replacement Skidtube

Start Date: 18/11/2011

Required Date: 16/01/2012

Start Qty: 1.00

Required Qty: 1.00

D2680-041

Manufactured No

210

Each

46.0000

1

1

\*D2680-041\*

Nut Plate

\*\*

DP 11-12-8

## Location

## Loc Qty

## Loc Code

LG

1

73334

1

ST020

45

73854

45

CR3212-4-03

Purchased

No

210

Each

1,904.000

2

2

\*CR3212-4-03\*

Cherry Rivet

\*\*

DP 11-12-8

## Location

## Loc Qty

## Loc Code

FB

2

110139

2

ST331

1902

114859

902

119017

1000

AN960JD416

NAS1149D0463J

Purchased

No

210

Each

0.0000

1

1

\*AN960JD416\*

Washer

\*\*

M 118384 (x1) 11/12/13

CCR264SS3-3

Purchased

No

210

Each

1,163.000

2

2

\*CCR264SS3-3\*

Cherry Rivet

\*\*

DP 11-12-8

## Location

## Loc Qty

## Loc Code

FP

2

113973

2

ST311

187

117849

187

ST317

974

119017

974

November-18-11 9:18:37 AM

Shop Packet Print

Page 4

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



# Picklist Print

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Page 5

Work Order ID: 76617

**\*76617\***

Parent Item: D206-642-151

**\*D206-642-151\***

Parent Item Name: Replacement Skidtube

Start Date: 18/11/2011

Required Date: 16/01/2012

Start Qty: 1.00

Required Qty: 1.00

MS27039-4-06

Purchased

No

210

Each

384.0000

1

1

**\*MS27039-4-06\***

Screw

\*\*

del 11/12/13

Location

Loc Qty

Loc Code

ST291

384

119075

384

x1

D2651-1

Manufactured

No

270

Each

745.0000

6

6

**\*D2651-1\***

Plug

\*\*

del 11/12/13

Location

Loc Qty

Loc Code

FP

745

57869

1

66445

10

69018

2

70839

2

71037

31

73827

699

x6

D2651-3

Manufactured

No

270

Each

1,235.000

6

6

**\*D2651-3\***

O-Ring

\*\*

del 11/12/13

Location

Loc Qty

Loc Code

FP

1235

61962

12

73489

223

73828

1000

x6

# Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

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Page 6

Work Order ID: 76617

\*76617\*

Parent Item: D206-642-151

\*D206-642-151\*

Parent Item Name: Replacement Skidtube

Start Date: 18/11/2011

Required Date: 16/01/2012

Start Qty: 1.00

Required Qty: 1.00

D3873-1

Manufactured No

280

Each

821.0000

14

14

\*D3873-1\*

Bushing

\*\*

11/12/13

Location

Loc Qty

Loc Code

ST088

821

64760

1

68247

4

73829

19

73830

16

73832

400

75481

381

V14

D2646

Manufactured No

280

Each

235.0000

1

1

\*D2646\*

Aft Cap

\*\*

11/12/13

Location

Loc Qty

Loc Code

FP002

218

73294

20

73825

198

FP004

8

68280

5

70945

1

71070

2

FP005

4

71038

4

FP006

5

62678

5

V1

D3805-041

Manufactured No

280

Each

1.0000

1

1

\*D3805-041\*

Wearplate Assembly Fwd, Low Gear

\*\*

B75486 (x1) 11/12/13

Location

Loc Qty

Loc Code

FP001

1

74893

1

November-18-11 9:18:37 AM

Shop Packet Print

Page 6

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

November-18-11 9:18:37 AM

Page 7

Work Order ID: 76617

\*76617\*

Parent Item: D206-642-151

\*D206-642-151\*

Parent Item Name: Replacement Skidtube

Start Date: 18/11/2011

Required Date: 16/01/2012

Start Qty: 1.00

Required Qty: 1.00

MS27039-1-08

Purchased

No

280

Each

1,747.000

2

2

\*MS27039-1-08\*

Screw

\*\*

Handwritten: 11/12/13

Location

Loc Qty

Loc Code

ST291

1747

117423

117

118378

130

118910

500

119075

500

119109

500

MS21042L3

Purchased

No

280

Each

8,753.000

7

7

\*MS21042L3\*

Nut

\*\*

Handwritten: 11/12/13

Location

Loc Qty

Loc Code

ST300

255

117441

16

117885

35

118451

5

118927

199

ST516

6000

119017

6000

ST518

2498

119075

2498

D3805-045

Manufactured

No

280

Each

5.0000

1

1

\*D3805-045\*

Wearplate Assembly Aft, Low Gear

\*\*

Handwritten: B75496 (x1) 11/12/13

Location

Loc Qty

Loc Code

FP

5

73817

1

74896

1

74938

3

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

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# Picklist Print

November-18-11 9:18:37 AM

Page 8

Work Order ID: 76617

**\*76617\***

Parent Item: D206-642-151

**\*D206-642-151\***

Parent Item Name: Replacement Skidtube

Start Date: 18/11/2011

Required Date: 16/01/2012

Start Qty: 1.00

Required Qty: 1.00

AN960JD10L NAS1149D0332J Purchased No

280

Each

0.0000

2

2

**\*AN960JD10L\***

Washer

\*\*

1118389(x2) 11/12/13

AN3-37A Purchased No

280

Each

1,966.000

7

7

**\*AN3-37A\***

Bolt

\*\*

11/12/13

## Location

## Loc Qty

## Loc Code

ST354

4

117619

4

ST518

1962

119086

1962

NAS1149D0363J Purchased No

280

Each

4,434.000

7

7

**\*NAS1149D0363J\***

Washer

\*\*

11/12/13

## Location

## Loc Qty

## Loc Code

ST019

16

117505

16

ST295

3000

119537

3000

ST298

1418

117601

148

118077

1

118612

55

118968

1214

11/12/13

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



ITEM	Qty -041	Qty -043	Part Number	Description
1	X		D3804-041	SKIDTUBE ASSEMBLY, 206 A/B LOW
2		X	D3804-043	SKIDTUBE ASSEMBLY, 206 A/B HIGH
5	1	1	D2600-1-160	EXTRUSION
6	1	1	D2646	AFT CAP
7	1	1	D2647	CAP
8	19	20	D2649	CROSS BOLT SPACER
9	6	8	D2651-1	PLUG
10	6	8	D2651-3	O-RING
11		1	D2654-3	WEB
12	1		D2654-1	WEB
13	1	1	D2680-041	NUT PLATE
14	2	2	D3286-1	DOUBLER
15	2	2	D3286-3	STUD
21	2	2	AN960JD10L	WASHER
22	1	1	AN960JD416	WASHER
23	2	2	CCR264SS3-3	RIVET
24	2	2	CR3212-4-03	RIVET
25	52	52	CR3212-4-04	RIVET
26	2	2	MS27039-1-08	SCREW
27	1	1	MS27039-4-06	SCREW

#### NOTES

- 1) MATERIAL: N/A
- 2) FINISH: -CHEMICAL CONVERSION COAT PER DART QSI 005 4.1  
-POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
- 3) BLACK ANTI-SKID PAINT AS INDICATED TO 0.5 ABOVE LOCATION RIDGE PER DART QSI 005 4.4
- 4) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 5) UNITS: INCHES UNLESS OTHERWISE NOTED
- 6) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 7) IDENTIFICATION: NONE
- 8) WEIGHT: 12.5 lb
- 9) WELD PER DART QSI 004
- 10) BENDING: DAMAGE TOLERANCE ON FWD BEND:  
THERE SHOULD BE NO VISIBLE WRINKLES IN THE BEND FROM THE GROUND TO A HEIGHT OF 5 INCHES ABOVE THE GROUND. IT IS ACCEPTABLE TO POLISH OUT GOUGES UP TO 0.020 DEEP IN THE BENT PORTION OF THE TUBE. A MAXIMUM REDUCTION IN DIAMETER OF 0.150" IS ACCEPTABLE IN THE BENT PORTION OF THE TUBE.
- 11) BOND WEB INTO OUTER TUBE WITH SIKAFLEX-241/-291 ADHESIVE PER DART QSI 015
- 12) INSERT D2651-1 PLUG C/W D2651-3 O-RING IN HOLES MARKED 'P' (BOTH SIDES OF TUBE)

SHOP  
RETURNED  
ENGINEERING  
UNCONTROLLED  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER  
NO. 76617 M.L.J  
11/11/18

RELEASED  
09.03.03  
per ECN 09-536

A	NEW ISSUE	MB	08.07.07
REV.	DESCRIPTION	BY	DATE
DESIGN	97	DART AEROSPACE USA, INC	
DRAWN	97	PORT HADLOCK, WA	
CHECKED	97	DRAWING NO.	REV. A
MFG. APPR.	97	D3804	SHEET 1 OF 5
APPROVED	97	TITLE	SCALE
DE APPR.	97	SKIDTUBE ASSEMBLY, 206A/B	NTS
DATE	08.07.07	<small>COPYRIGHT © 2008 BY DART AEROSPACE USA, INC THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.</small>	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

RELEASED  
09.03.03



DESIGN	99	<b>DART AEROSPACE USA, INC</b>	
DRAWN	9	PORT HADLOCK, WA	
CHECKED	9	DRAWING NO.	REV. A
MFG. APPR.	9	D3804	SHEET 2 OF 2
APPROVED	9	TITLE	SCALE
DE APPR.	9	SKIDTUBE ASSEMBLY, 206A/B	N/A
DATE	08.07.07	COPYRIGHT © 2003 BY DART AEROSPACE USA, INC THIS DOCUMENT IS PRINTED FROM A FILE ON A COMPUTER. IT IS NOT TO BE USED FOR ANY PURPOSE OR COMMERCIALIZED IN ANY MANNER, PERSON OR ORGANIZATION.	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

RELEASED  
U 09.03.03



DESIGN	99	<b>DART AEROSPACE USA, INC</b>	
DRAWN	J	PORT HADLOCK, WA	
CHECKED	J	DRAWING NO.	REV. A
MFG. APPR.	EE	D3804	SHEET 3 OF 5
APPROVED	J	TITLE	SCALE
DE APPR.	J	SKIDTOE ASSEMBLY, 206A/B	NTS
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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

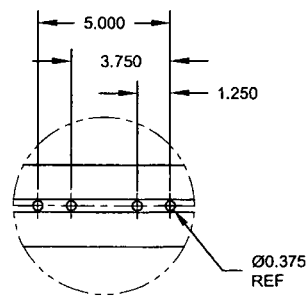
Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

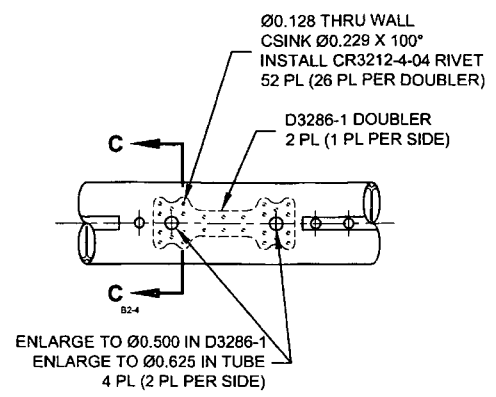
**NOTE:** Date & initial all entries

76617

**RELEASED**  
 (P 09-03-03)

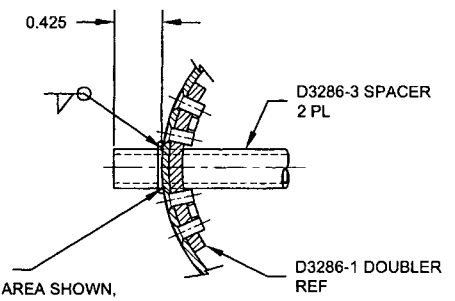


**DETAIL A** D6-2  
 C2-2  
 D6-3  
 C2-3  
 SCALE NONE

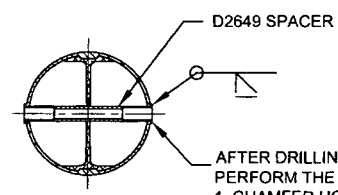


**DETAIL B** C3-2  
 C3-3  
 SCALE NONE

- TO INSTALL D3286-1/-3:
1. GRIND OFF FLANGE IN AREA SHOWN, FLUSH WITH OUTSIDE SURFACE OF ROUND TUBE
  2. LOCATE & DRILL D3286-1 DOUBLER USING DT3286-1T1
  3. ENLARGE HOLES IN D3286-1 TO Ø0.500
  4. ENLARGE HOLES IN TUBE TO Ø0.625 AND CHAMFER HOLE 0.03 X 45°
  5. RIVET D3286-1 TO TUBE
  6. INSERT D3286-3 SPACER
  7. WELD IN PLACE AND GRIND FLUSH



**SECTION C-C** C6-4  
 PARTIAL SECTION  
 SCALE NONE



**SECTION D-D** A4-2  
 A4-3  
 FOR Ø0.375 HOLES ONLY  
 SCALE NONE

- AFTER DRILLING AND BENDING ASSEMBLY PERFORM THE FOLLOWING FOR Ø0.375 HOLES ONLY:
1. CHAMFER HOLE 0.03 X 45°
  2. INSERT D2649 SPACER
  3. WELD INTO PLACE AND GRIND FLUSH
  4. CBORE TO Ø0.313 X 0.75 DP (EXCEPT WHERE INDICATED)

DESIGN	91	<b>DART AEROSPACE USA, INC</b>	
DRAWN	J	PORT HADLOCK, WA	
CHECKED	P	DRAWING NO.	REV. A
MFG. APPR.	E	D3804	SHEET 4 OF 5
APPROVED	H	TITLE	SCALE
DE APPR.	H	SKIDTUBE ASSEMBLY, 206A/B	NTS
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**NOTE:** Date & initial all entries



76617

RELEASED  
97 09.03.03

CCR264SS3-3  
RIVET  
2 PL

CR3212-4-03 RIVET  
2 PL

**VIEW G-G**  
SCALE NONE A7-5

D2647 CAP, TO INSTALL:  
1. CUT TUBE LEVEL  
2. REMOVE RIDGE ON FWD SIDE  
3. LOCATE D2647 (TRIM AS REQD)  
4. WELD D2647 IN PLACE  
5. GRIND FLUSH  
6. RIVET D2680-041 NUT PLATE IN PLACE

MS27039-4-06 SCREW  
AN960JD416 WASHER

D2680-041  
NUTPLATE

1.0 REMOVE RIDGE ON  
INSIDE OF SKIDTUBE  
LEAVE 0.070 MIN.

C7-5 G

G 1/16

**DETAIL E**  
SCALE NONE B7-2  
B7-3

0.400

END OF WEB

BORE OUT END  
OF SKIDTUBE  
TO 0.75 DEPTH  
AND 0.070 WALL

SEAL WITH  
SIKAFLEX-241/291

D2646 AFT CAP

Ø0.204  
REF

MS27039-1-08 SCREW  
AN960JD10L WASHER  
2 PL

**DETAIL F**  
SCALE NONE B2-2  
B2-3

DESIGN	91	<b>DART AEROSPACE USA, INC</b>	
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CHECKED	91	DRAWING NO.	REV. A
MFG. APPR.	91	D3804	SHEET 5 OF 5
APPROVED	91	TITLE	SCALE
DE APPR.	91	SKIDTUBE ASSEMBLY, 206A/B	NTS
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NOTE: Date & initial all entries

NO. 274

AWS D17.1.2001  
QUALIFICATION TEST RECORD

Name: Barclay Elliott  
Job number: 75391  
Part number: 206 642 151  
Description: 206 skid tube  
Welding Process: Tig ☒ Mig ☐  
Base material: Aluminum  
Current: AC ☒ DC ☐

TEST REQUIREMENTS AND RESULTS

Visual: pass ☒ fail ☐  
Penetration: pass ☒ fail ☐

UNACCEPTABLE

Cracks: pass ☒ fail ☐  
Undercut: pass ☒ fail ☐  
Pin holes: pass ☒ fail ☐  
Overlap (cold lap): pass ☒ fail ☐  
Porosity (surface): pass ☒ fail ☐  
Coloration: pass ☒ fail ☐

Qualifier Sal Kurn Date of Test Coupon 11-11-18

Welder John Smith Date of Test Coupon 11-11-18

The above named individual is qualified in accordance with AWS D17.1.2001 to weld